Dashboard Widgets

Session 114

These are confidential sessions—please refrain from filming or taking pictures.

Application Technologies

Dashboard Widgets

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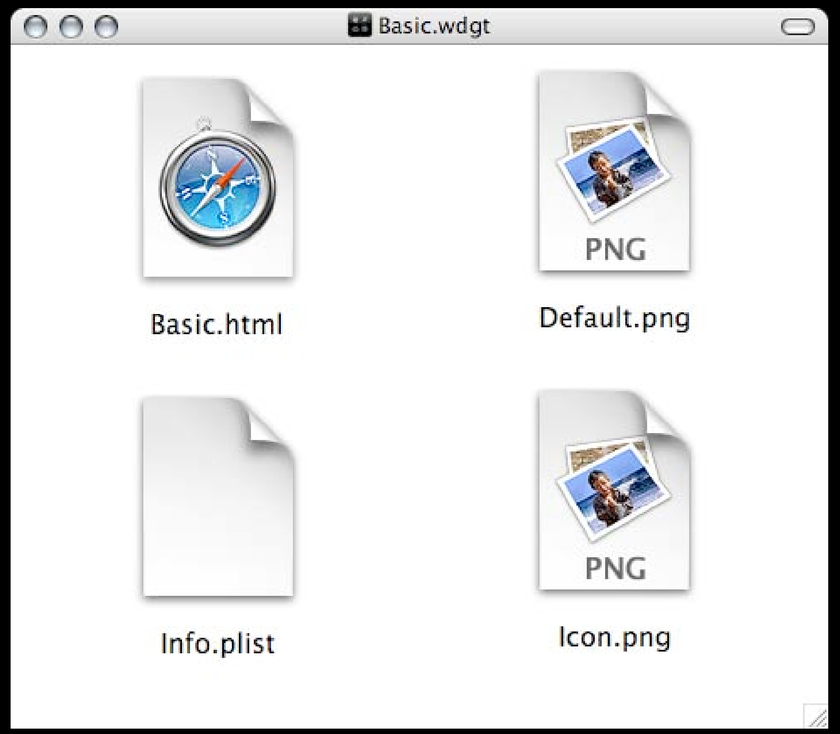
http://developer.apple.com/wwdc2005/

What You'll Learn

- The basic widget
- Design tips
- Localization
- Preferences and widget backs
- Widget events

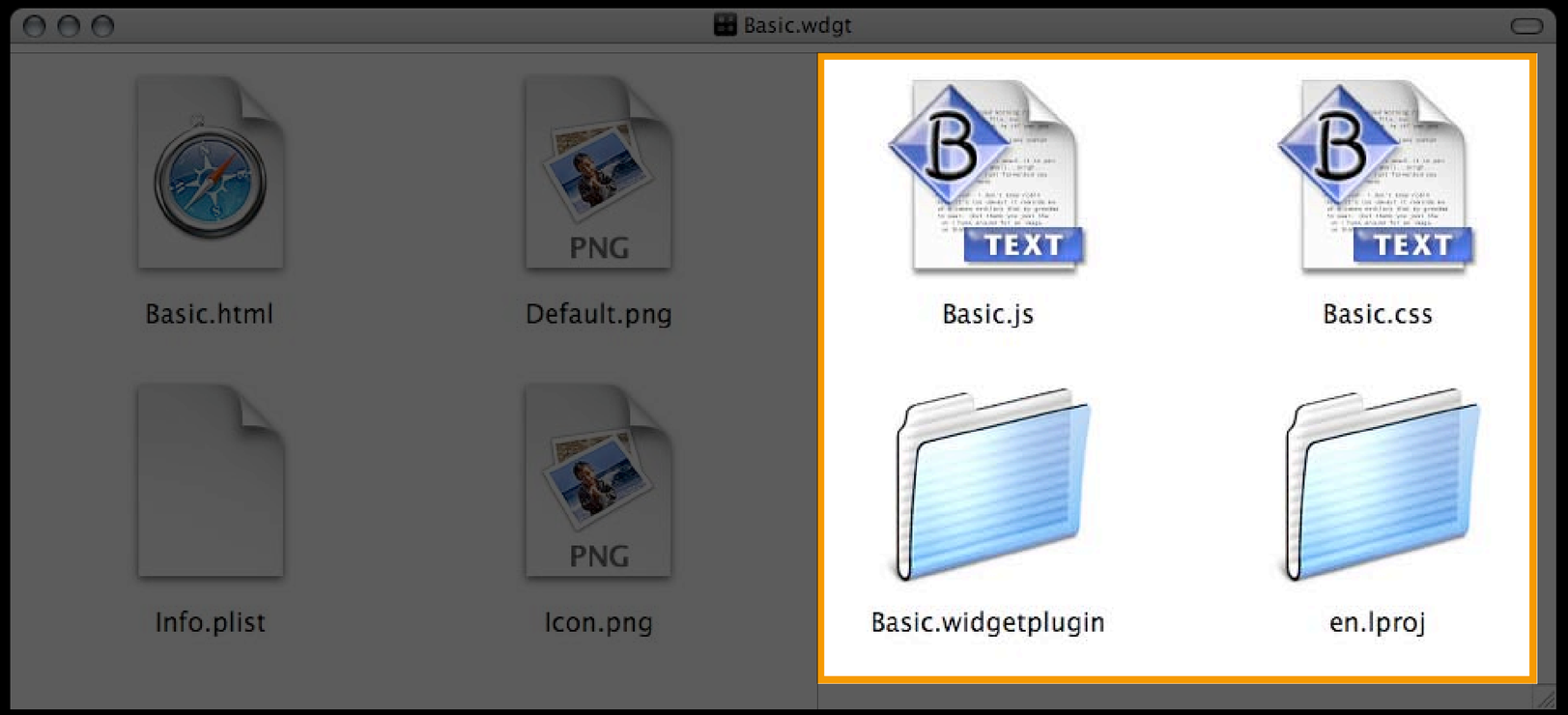
What's in a Widget?

- At least four things in a widget bundle:



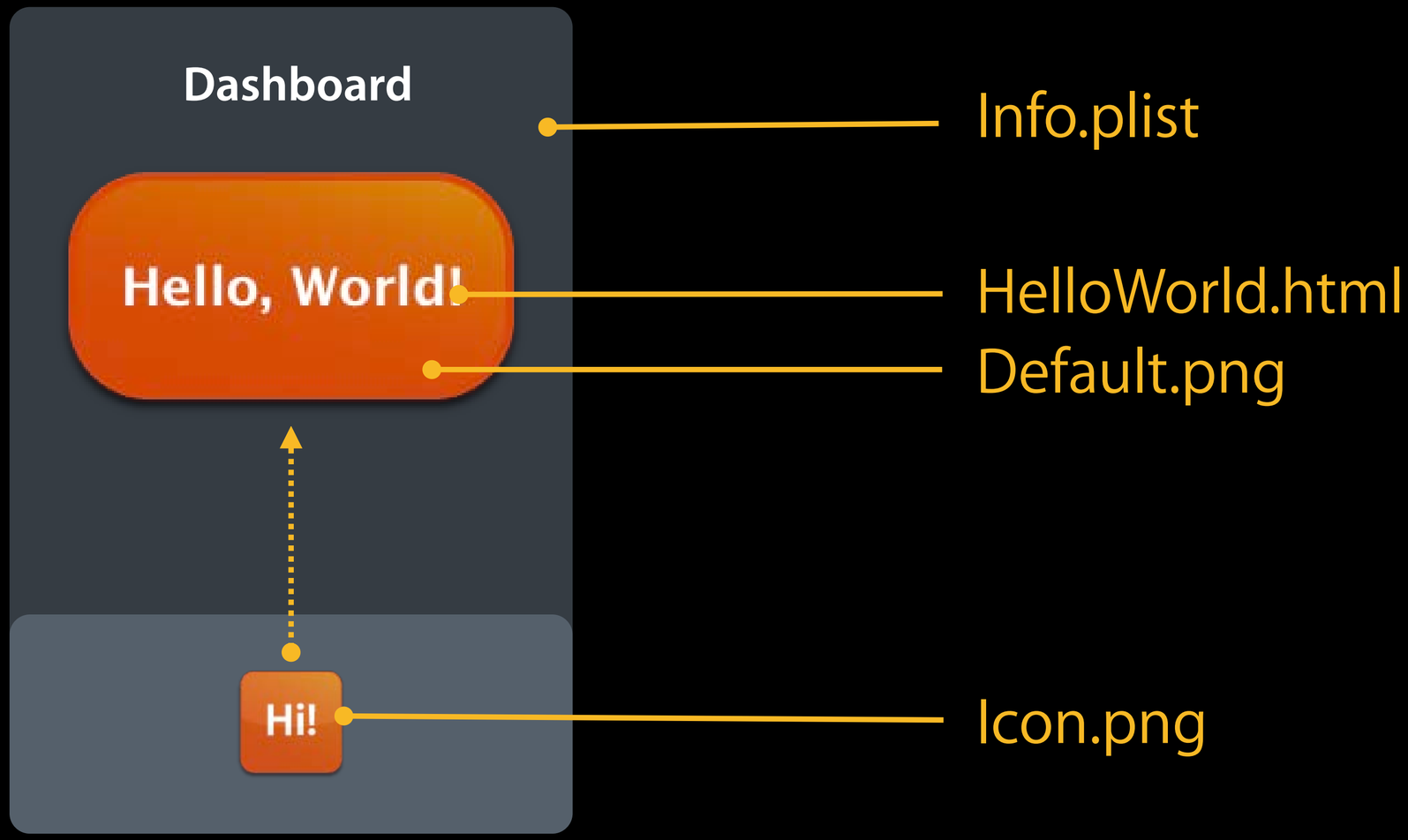
What's in a Widget?

- You also could have:



Your First Widget

Getting Acquainted



Demo

Assemble Your First Widget

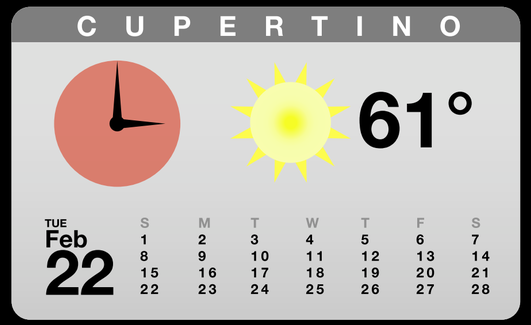
http://developer.apple.com/wwdc2005/

So Now What?

- Make your widget interactive
  - Integrate widget technologies
  - Leverage web kit
- But first, think about your design…

Make Your Widget Succinct

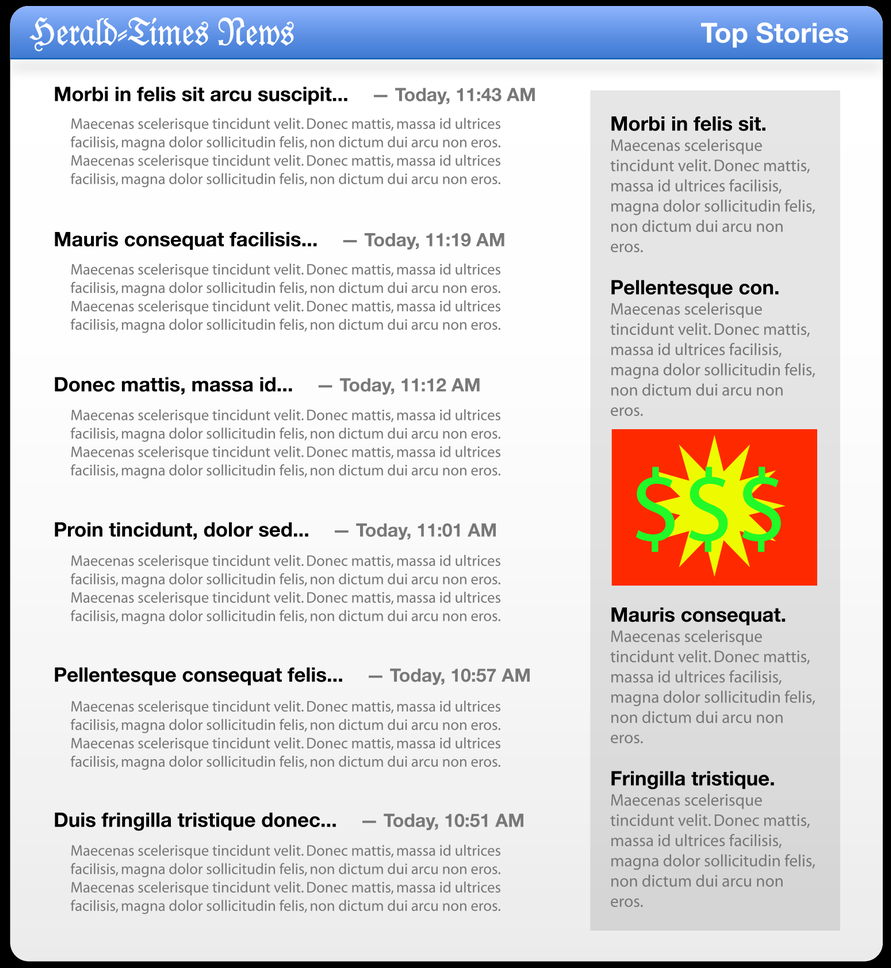
Focus on Your Primary Purpose



VS.

Smaller Is Better

Use the Smallest, Effective Size Possible



VS.

Use Color to Your Advantage

Make Your Widget Instantly Recognizable

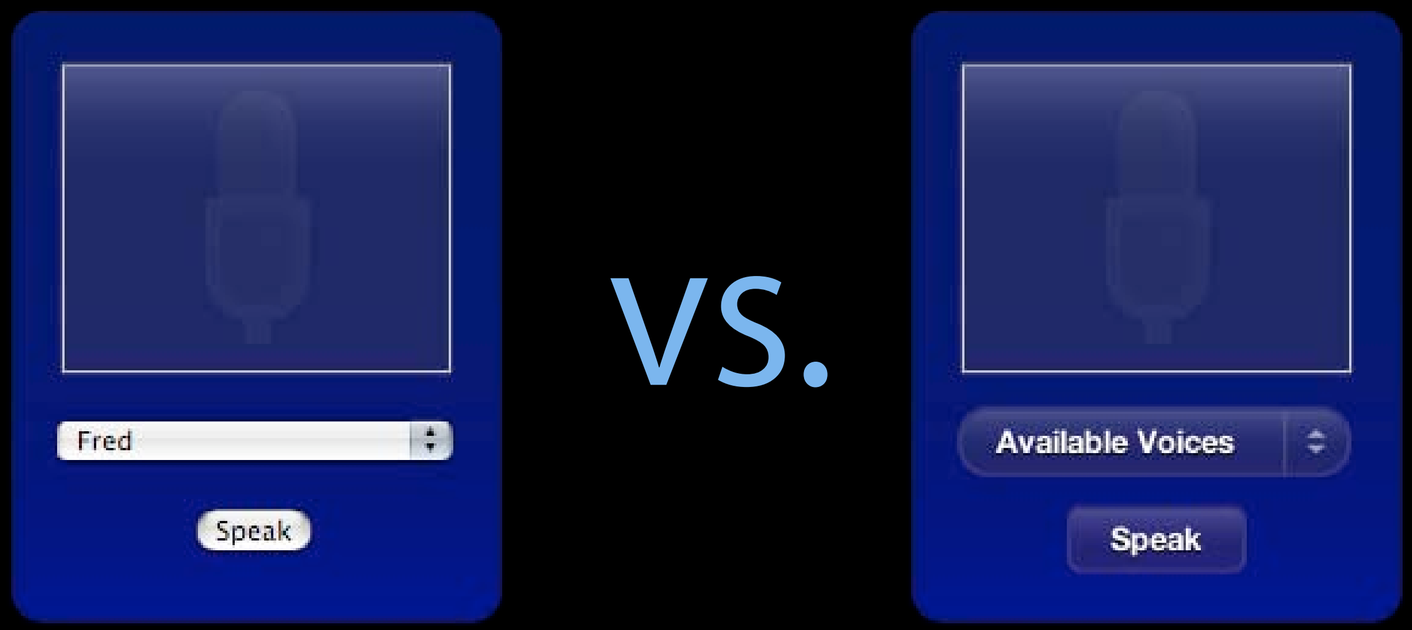
Careful with Branding

Don’t Waste Space with One-time Information

VS.

Custom Controls vs. Aqua

Aqua Is Disruptive on a Widget's Front Side



Close Boxes

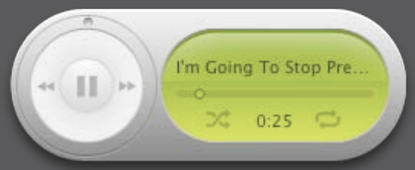
Top-Left Corner Shows Ownership

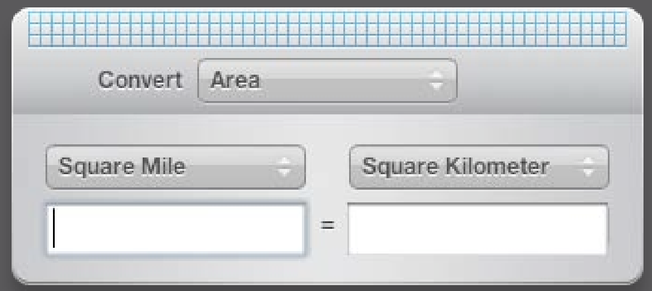
Apple-supplied Artwork

/System/Library/WidgetResources/

Look Around

Others Widgets Are Great Sources of Inspiration

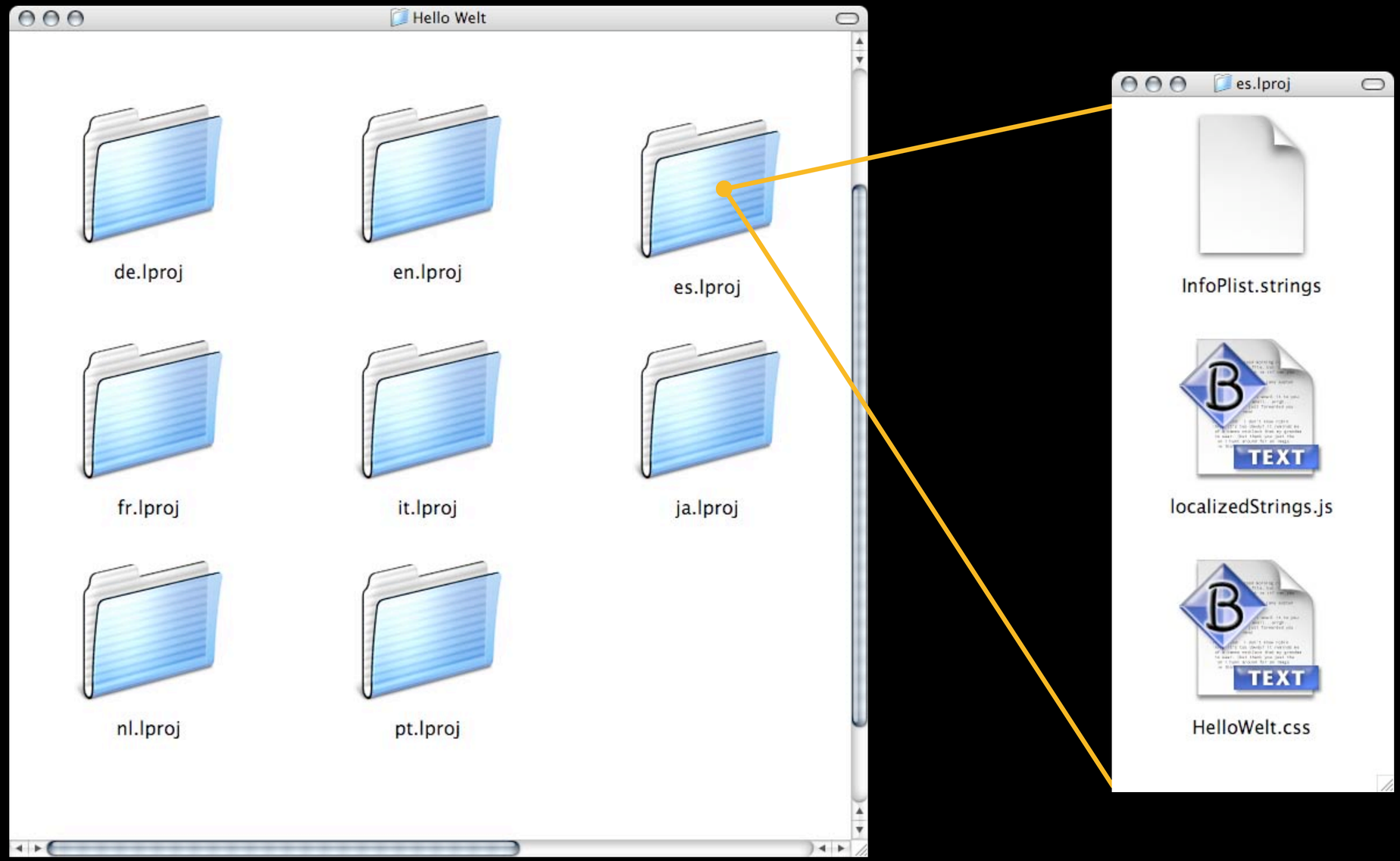




Localization

http://developer.apple.com/wwdc2005/

Localize Your Widget!



Widget Names

- InfoPlist.strings:

```
CFBundleDisplayName = "Hola Mundo";
```

- Localized widget name
  - Finder
  - Widget bar

Localized Strings

Language Project

localizedStrings.js

```
var localizedStrings = new Array;

localizedStrings['Hello, World!'] = '¡Hola, Mundo!';
```

Localized Strings

Language Project

localizedStrings.js

JavaScript File

Includes

Main HTML File

Localized Strings

Language Project

localizedStrings.js

JavaScript File

setup()

Main HTML File

Localized Strings

JavaScript File

```
function setup()
{
        document.getElementById('helloText').innerText = getLocalizedString('Hello, World!');

}
```

Localized Strings

```
function getLocalizedString(key)
{
        var ret = localizedStrings[key];
        if (ret === undefined) {
                ret = key;
        }
        return ret;
}
```

Language Project

localizedStrings.js

JavaScript File

```
localizedStrings['Hello, World!'] = '¡Hola, Mundo!';
```

Localized Strings

```
function setup()
{
        document.getElementById('helloText').innerText = getLocalizedString('Hello, World!');

}
```

JavaScript File

Main HTML File

Other Localizable Content

- Style sheets
  - String placement
  - Colors
- Images

Demo

Localization

http://developer.apple.com/wwdc2005/

Widget Backs and Preferences

Adding Preferences in HTML

- Each “side” is a different layer

```
<body>

        <div id="front">
                <!-- Widget’s Front here -->
        </div>

        <div id="back">
                <!-- Widget’s Back here -->
        </div>

</body>
```

Adding Preferences in CSS

- Show the front

```
#front {
        display: block;
}
```

- Hide the back

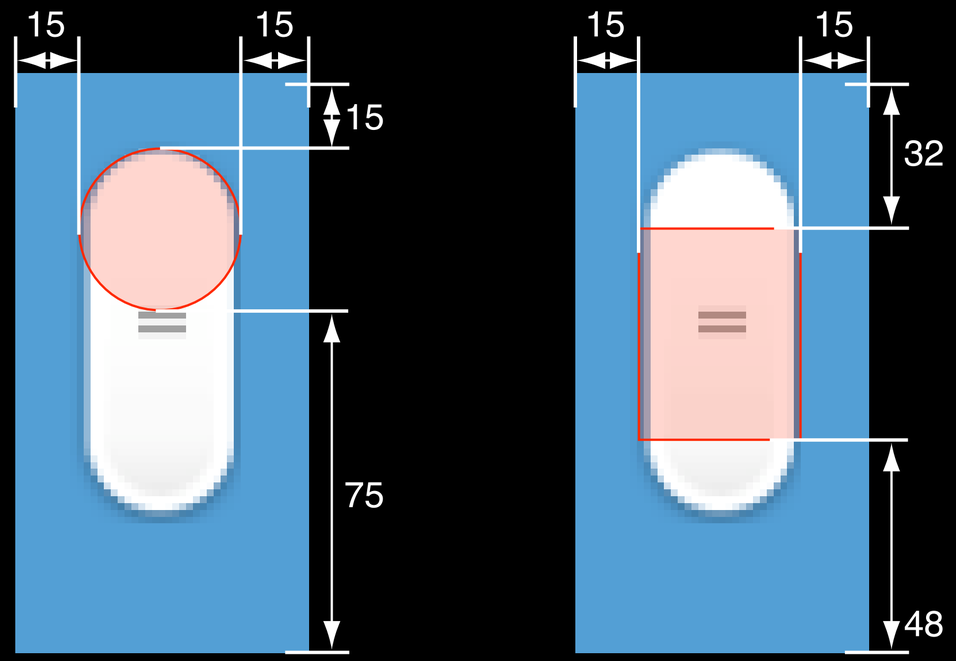
```
#back {
        display: none;
}
```

Use the Info Button

- Standard control for widget flip
- Two parts
  - “i” icon
  - Background circle
- Available in:
  - `/System/Library/WidgetResources/`
  - Black or white
- Use fades and rollovers
- Try to place at the bottom right

Control Regions

- Widgets are grabbed from anywhere
- You need to specify areas where they shouldn’t be




```
-apple-dashboard-region:
  dashboard-region(control circle t r b l)
  dashboard-region(control rectangle t r b l);
```

Adding Preferences in JavaScript

- `widget.prepareForTransition("ToBack")`
  - Freezes widget UI so that you can hide the front and show back
  - `document.front.style.display='none';`
  - `document.back.style.display='block';`
- `widget.performTransition()`
  - Gives you the flip animation

On the Back

- Branding and copyright info
- Use Aqua controls
- “Done” button
  - Shows that changes take effect
  - Don’t reuse Info button

Adding Preferences: Flipping to Front

- `widget.prepareForTransition("ToFront")`
  - `document.back.style.display='none';`
  - `document.front.style.display='block';`
- `widget.performTransition()`

Demo

The Flip

http://developer.apple.com/wwdc2005/

Saving Preferences

- Save preferences the moment that they’re set
- Set preferences using:

```
widget.setPreferenceForKey(preference, “key”);
```

Retrieving Preferences

- Most useful in an `onload` handler
- Get preferences using:

```
var foo = widget.preferenceForKey(key);
```

Demo

Saving Preferences

http://developer.apple.com/wwdc2005/

Global vs. Instance

- All widgets are multiple instance
- Each widget has a unique identifier
  - `widget.identifier`
  - Integrate identifier into saved key:

```
function makeKey(key)
{
      return widget.identifier +"-"+ key;
}
```

Instance Preferences

```
var foo = widget.setPreferenceForKey(pref, makeKey(“key”));
```

```
function makeKey(key)
{
      return widget.identifier +"-"+ key;
}
```

```
var foo = widget.setPreferenceForKey(pref, widget.identifier +“key”);
```

Demo

Multiple Instances

http://developer.apple.com/wwdc2005/

Event Handlers

- Usage

```
if (window.widget)
{
        event = handlerFunction;
}
```

Dashboard Activation Events

- `widget.onshow`
  - Start processor—intensive tasks
  - Change state
  - Update information
- `widget.onhide`
  - Suspend intensive activity
  - A widget shouldn’t use resources when it’s hidden!

Widget Focus Events

- `window.onfocus`
  - Notification when your widget obtains key focus
- `window.onblur`
  - Notification for when your widget looses key focus

Widget Removal Event

- `widget.onremove`
  - Use to cleanup your preferences

```
function onremove()
{
      widget.setPreferenceForKey(null,makeKey("key"));
}
```

Widget Methods

- Opening an application

```
widget.openApplication(“com.apple.iTunes”)
```

- Opening a web page

```
widget.openURL(“http://www.apple.com/”)
```

Demo

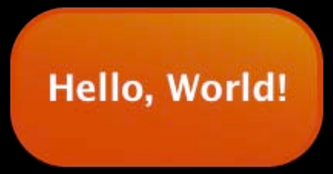
Widget Events

http://developer.apple.com/wwdc2005/

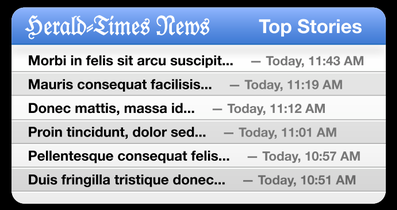
Widget Delivery

- Get your widget out there!
  - Archive it
  - Serve it
  - Submit it
- www.apple.com/downloads/macosx/dashboard/

What We've Covered



The Basic Widget



Design Tips

Localization

Widget Events

Preferences and Widget Backs

Documentation, Sample Code, and Other Resources

http://developer.apple.com/wwdc2005/

Related Sessions

Advanced Dashboard Widgets Advanced topics in widget development	**Session 134** **Thursday 2:00pm**
Advanced Web Kit Development Web kit plugin development	**Session 129** **Thursday 10:30am**
Safari for Web Designers Recent additions to web kit that affect widgets	**Session 135** **Thursday 2:00pm**
Dashboard Widget Development Lab Meet with dashboard and web kit engineers	**Wednesday 3:30pm**

Who to Contact

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Widget Developer Community
http://lists.apple.com

Q&A

http://developer.apple.com/wwdc2005/

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